

## **AMENDMENTS TO THE CLAIMS:**

Please amend the claims as follows:

1. (currently amended) An isolated and/or purified nucleic acid ~~sequence~~ which encodes for a protein having lycopene  $\epsilon$ -cyclase enzyme activity and has an amino acid sequence which is at least 85% identical to SEQ ID NO: 23 ~~one of SEQ ID NOS: 23 or 25-27.~~

2. (currently amended) The nucleic acid ~~sequence~~ of claim 1, wherein the protein has the amino acid sequence of one of SEQ ID NOS: 23 ~~or 25-27.~~

3. (currently amended) A vector comprising the nucleic acid ~~sequence~~ of claim 1, wherein the nucleic acid ~~sequence~~ is operably linked to a promoter.

4. (original) A host cell which contains the vector of claim 3.

5. (original) The host cell of claim 4, wherein the host cell is selected from the group consisting of a bacterial cell, an algal cell, a yeast cell and a plant cell.

6. (original) The host cell of claim 4, wherein the host cell is a photosynthetic cell.

7. (withdrawn) An isolated and/or purified protein having lycopene  $\epsilon$ -cyclase enzyme activity and having an amino acid sequence which is at least 85% identical to one of SEQ ID NOS: 23 or 25-27.

8. (withdrawn) The protein of claim 7, wherein the protein has the amino acid sequence of one of SEQ ID NOS: 23 or 25-27.

9. (new) The nucleic acid of claim 1 wherein said amino acid sequence is at least 90% identical to SEQ ID NO: 23.

10. (new) The nucleic acid of claim 1 wherein said amino acid sequence is at least 95% identical to SEQ ID NO: 23.